Near Miss and Serious Nonfatal Accidents
Metal and Nonmetal Mining

September 2013 through December 2014

NEAR MISS AND SERIOUS ACCIDENTS

- Near miss and serious nonfatal accidents occur each year at metal and nonmetal mines. These near misses and non fatal accidents occur in a variety of accident classifications, including:
  - Powered haulage
  - Electrical
  - Machinery
  - Fall of roof or back
  - Fall of person
  - Falling, rolling, sliding material
  - Inundation
  - Hand tools
  - Exploding vessels
  - Fire

POWERED HAULAGE

- Powered Haulage includes accidents involving motors and rail cars, conveyors, belt feeders, longwall trucks, front-end loaders, load-haul-dumps, forklifts, cherry pickers, mobile cranes if traveling with a load, etc.
- included are accidents caused by an energized or moving unit or failure of component parts. For example, if a car dropper is injured falling from a moving car, the accident is classified as haulage.

POWERED HAULAGE

January 27, 2014

A plant foreman removed a guard from the side of an operating self-cleaning belt conveyor tail pulley to clean a buildup of material and became entangled in the rotating pulley. First responders had to perform trauma surgery at the scene to remove the victim's arm from his shoulder to free him from the equipment. The foreman failed to shut off power to the conveyor and did not block the conveyor against hazardous motion before removing the guard.

POWERED HAULAGE

March 12, 2014

Surface Sand & Gravel – The clothing of a miner working near an unguarded rotating belt conveyor tail pulley was drawn into the pulley. The miner suffered serious arm injuries.

POWERED HAULAGE

March 18, 2014

Crushed Limestone mine – An over-the-road truck raised the bed and contacted an overhead power line causing the cab and wheels to catch on fire. There were no signs warning of the presence of the overhead power lines, nor did the mine operator provide site specific hazard awareness training to contract truck drivers.

POWERED HAULAGE

March 25, 2014

Surface Gold Mine Construction Project – Two construction miners were working in an 80-foot manlift when the main extending cable for the upper boom broke. The upper boom retracted uncontrollably into the main boom. The two miners in the basket were wearing the appropriate fall protection, yet they were seriously injured and were transported by EMS to a local hospital.

POWERED HAULAGE

April 4, 2014

Common Clay Facility - A manlift operator working on a hopper from the basket was pinned between the controls of the manlift and steel tubing on the hopper. The basket was located on the opposite end of the manlift causing the tram levers to operate backwards. When the operator pushed the lever forward the man-lift moved backwards. The operator suffered fractured ribs, bruised back, and was hospitalized for two days.

POWERED HAULAGE

April 17, 2014

Surface Limestone Mine- Flames and smoke above the cab platform from a broken hydraulic hose prompted the operator to jump from the cab of a CAT 769C, 35 Ton Haul Truck. The cab was equipped with a fire extinguisher but the intensity of the flames caused him to jump. He fell seven feet, fracturing his right foot and left tibia at the knee and severely bruising his elbow.

POWERED HAULAGE

April 22, 2014

Surface Phosphate Mine - A passenger in a pickup truck was injured when the driver lost control of the truck due to excessive speed. The truck passed through a berm and landed on its side in a water-filled ditch. The injured employee suffered contusions to the chest.

POWERED HAULAGE

June 27, 2014

A miner operating a bulk explosives truck lost control of the truck, traveled down a steep slope and crashed into a berm. The miner was pinned inside the vehicle until rescue personnel could extract him.

POWERED HAULAGE

June 30, 2014

Surface Crushed and Broken Stone Mine – A miner attempted to remove a rock from a belt conveyor return roller while the conveyor was operating. The miner's arm was caught between the moving conveyor and the return roller, severely burning and lacerating the miner's arm. The conveyor should have been shut down and locked out.

POWERED HAULAGE

September 9, 2014

Cement Plant – A miner with 12 years working experience operating an open cab front end loader was seriously burned by hot cement clinker on his upper extremities (hands, forearms, knees, upper chest, neck, face, and eyes). He was not wearing proper appropriate personal protective equipment (PPE).

POWERED HAULAGE

October 6, 2013

A plant foreman noticed that the guard for the V-belt drive on a conveyor belt had vibrated loose. The foreman shut the power off to the screen downstream but not to the conveyor drive, nor did he block the conveyor against hazardous motion. While attempting to reinstall the guard, the foreman's index and middle fingers became entangled between the V-belts and the pulley and were amputated.

POWERED HAULAGE

October 22, 2014

Surface Sand & Gravel mine - The crushing superintendent was leaning across a 42-inch belt conveyor while attempting to remove a portion of the rubber belt skirting. The belt conveyor was not locked out and was started remotely. The superintendent fell onto the belt and was pulled under the portable crusher 18 feet toward the discharge point. He managed to grab the cross belt magnet frame and hold on until the conveyor was stopped.

POWERED HAULAGE

November 7, 2013

Surface Gypsum - A front-end loader traveling with a full bucket in the elevated position collided with a water truck in front of the rusher feed ramp. The rising sun temporarily blinded the loader operator, who did not see the water truck in his path. There was extensive damage to the truck's cab but no injury occurred .

POWERED HAULAGE

November 11, 2014

Crushed Broken Limestone Mine - Surface – A haul truck operator was ejected from his haul truck when he lost control and overturned as he was traveling up a steep haulage road. The miner suffered a punctured lung, abrasions, broken ribs, and fractured elbow. He was not wearing a seat belt.

POWERED HAULAGE

November 16, 2014

Industrial Sand mine – A miner was clearing snow off a rail switch with a leaf blower. The miner was wearing hearing protection and did not hear or see an approaching train. The miner was struck by the train, knocked to the ground, and suffered an amputated arm when a railcar ran over his arm.

POWERED HAULAGE

December 2014

Surface Sand mine – When a truck driver raised the bed of his truck to empty material, the truck bed contacted an overhead 7,200-volt power line. Other drivers in the area saw the driver start to get out of the truck and warned him to stay inside the cab. The power company de-energized the line and the truck was removed from the area. Had the driver exited his truck he could have been fatally electrocuted.

EXPLODING VESSELS UNDER PRESSURE

- These accidents are caused by the explosion of air hoses, air tanks, hydraulic lines, hydraulic hoses, and similar events.

EXPLODING VESSEL UNDER PRESSURE

March 2014

Surface Construction Sand & Gravel mine – A flat tire on the Grader was being inflated and had approximately 30 psi when it blew off the wheel rim. The victim had just checked the tire and was standing approximately 3 feet in front of it when the metal rim exploded, blowing him against a water truck 15 feet away.

MACHINERY

- Accidents that result from the action or motion of machinery or from failure of component parts. Included are all electric and air-powered tools and mining machinery such as drills, tuggers, slushers, draglines, power shovels, loading machines, compressors, etc. This includes derricks and cranes except when they are used in shaft sinking (see Hoisting) or mobile cranes traveling with a load (see Powered Haulage).

MACHINERY

February 26, 2014

Two miners were drilling holes with a truck mounted drill. The drill operator was at the controls of the drill as the assistant approached the rotating auger and reached down to collect a sample of drill cuttings. The drill assistant's vest was entangled in the drill steel and he was pulled into the rotating drill steel. The drill operator stopped the rotation before the assistant was seriously injured.

MACHINERY

April 22, 2014

Surface Sand & Gravel Mine - A miner was standing on the side of the cone crusher cleaning material from the cone supply chute from the screen deck. When a wind gust blew his hard hat off and caused the miner to shift positions, the paddle bar he was using contacted the vibrating screen. The opposite end struck the miner in the jaw and knocked him over the handrail to the ground.

MACHINERY

May 14, 2014

Cement Facility - A roller compactor operator was seriously injured while compacting gravel around the unbermed and open excavation. As the machine tipped into the excavation, the miner unbuckled his seatbelt and tried to jump clear, but the compactor landed on top of him, crushing his hip. Had the equipment operator stayed in place with his seatbelt secured, his injuries likely would have been minor. This accident likely would not have occurred had berms been in place.

MACHINERY

June 6, 2014

Crushed & Broken Limestone mine (wet mining site) – A dragline slid into a water filled pit when the ground gave way beneath it. The dragline operator swam to safety while the dragline submerged. No injury occurred to the dragline operator. However, the potential for drowning was high because as equipment submerges eddies are created that can pull a person down with the machine.

MACHINERY

June 13, 2014

Construction Sand & Gravel mine – A Cat 245 excavator parked near the edge of the lake fell into the water when the bank gave way. The miners were away at lunch. Had the accident occurred earlier, the excavator operator might have drowned.

MACHINERY

July 19, 2014

A miner suffered chemical burns when he was sprayed with sulfuric acid. The acid blew out of an unrestrained 2-inch hose when he pressurized it.

MACHINERY

September 19, 2013

Surface Gold Mine - A Caterpillar D-10 dozer operator was cleaning material while traveling parallel along the toe of the high-wall. When the dozer hooked a rock at the toe, the highwall failed. The rock broke out the cab's glass and entered the operator's station. The operator of the dozer was uninjured.

MACHINERY

September 2014

Surface Alumina operation - A contract supervisor was burned by spraying caustic liquor while supervising the removal of a piping T-joint . The supervisor, who was not wearing proper PPE, received second and third degree burns to his back.

MACHINERY

October 1, 2013

A miner attempting to remove a boom pin on a Hitachi EX500 shovel was injured when the pin suddenly shot out of its bushing and struck him in the leg, breaking his tibia. Excessive pressure was being applied to the pin by a come-along and a forklift.

MACHINERY

October 2014

Surface Dredging operation – A dredge operator's right leg became entangled in an exposed drive shaft and was amputated below the knee. A guard had previously been provided, but the drive shaft had been lengthened after a new motor was installed. Therefore, the guard was no longer sufficient to protect miners from moving parts.

MACHINERY

November 2014

Surface Stone operation – A drill operator parked under a 7,620-volt power line and contacted the energized line while raising the mast to service the air compressor. The operator remained inside the drill and called the mine foreman who contacted the power company and had the line deenergized. The drill operator remained inside the cab until the power company confirmed it was safe to exit.

MACHINERY

November 2014

A miner's leg was injured and the toes of one foot were partially amputated when his leg was caught between an impact crusher rotor and the wall. The wedge that was in place to prevent rotation fell out of place, causing the rotor to turn.

IGNITION OR EXPLOSION OF GAS

- Accidents resulting as a consequence of the ignition, or explosion of gas or dust. Examples are exploding gasoline vapors, space heaters and furnaces.

IGNITION OF GAS

November 17, 2014

Surface Phosphate Mine – A contract dozer operator was checking the fuel level in a D8T Cat dozer by looking down the filler neck. A fuel vapor ignition occurred causing a flashback in the dozer operator's face. The employee, who was not wearing safety glasses, suffered second degree facial burns and heat burns to his right eye. The fire marshal believes the victim was smoking at the time of the flashback.

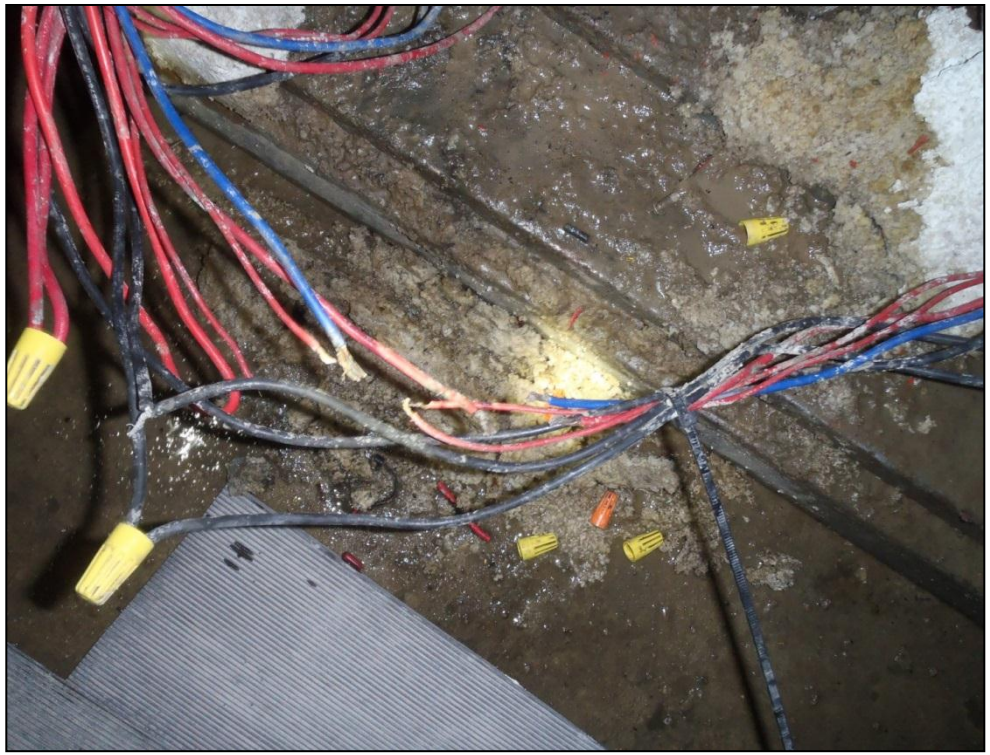
ELECTRICAL

- Accidents in which electric current is the primary cause of the resulting accident.

ELECTRICAL

May 16, 2014

A contract HVAC repairman was checking a 480 volt HVAC unit. While he was placing a tie wrap around a bundle of wires he contacted a 277-volt energized power wire, which caused him to be electrically shocked.



ELECTRICAL

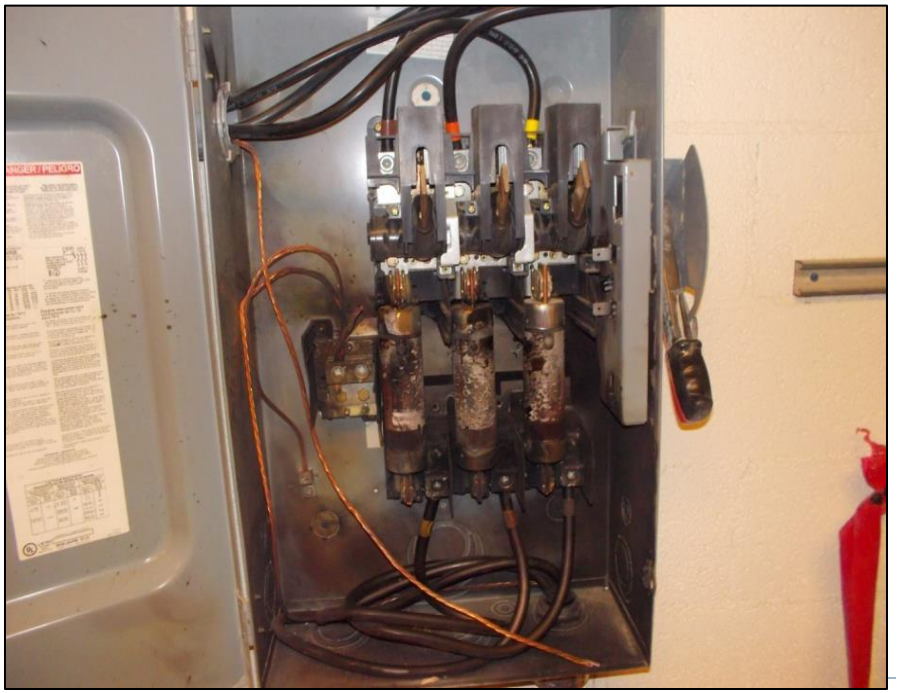
June 8, 2014

Taconite mine – A mine electrician did not lock out a 4160-volt starter/disconnect when testing a circuit with a 600-volt meter. The safety device that prevents the starter door from being opened when the system is energized had been defeated. The electrician was burned from the arc flash that occurred when he contacted bare metal conductors inside, and the meter “blew up” in his hands. The electrician, who was not wearing proper protective gear, was hospitalized with burns to this hands and face.

ELECTRICAL

July 10, 2014

Surface Copper - A company electrician with 6 years of experience at this mine was checking ground continuity and resistance of an energized 480 volt electrical disconnect. The electrician contacted an energized 200-Amp fuse creating an arc-flash explosion. The electrician was burned on his hand, arm and face. The lack of proper arc-flash rated personal protective equipment (PPE) contributed to the seriousness of the injuries. Proper de-energizing and lockout would have prevented the accident.



ELECTRICAL

Dec. 4, 2014

Surface Sand and Gravel mine – During an inspection of the wash plant, a damaged electrical conductor was found on a screen plant and an exposed conductor was contacting the metal work platform. Despite a warning light indicating a ground fault condition, two miners continued to operate the wash plant with the ground fault present. Fortunately no one was injured.

FIRE

- In underground mines, an unplanned fire not extinguished within ten minutes of discovery. In surface mines and surface areas of underground mines, an unplanned fire not extinguished within 30 minutes of discovery.

FIRE

July 10, 2014

Industrial Sand mine – Mechanics were cutting a pipe on a tank at the underground wash plant when they ignited the rubber lining of the tank. The fire burned for several days, causing extensive damage to the wash plant and mine roof over the wash plant. The miners that were underground evacuated safely.

HAND TOOLS

- Accidents related to non-powered tools when being used as hand tools. These accidents do not include those involving electric tools or air-powered tools.

HAND TOOLS

August 19, 2014

Cement Facility – A miner inside a barricaded area on the preheater tower was struck in the back by a 4-pound hammer that was accidentally dropped by a contractor working on the level above. The miner, who should not have been inside the barricade, was transported to the hospital and was released with no restrictions.

FALL OF ROOF OR BACK

- Underground accidents which include falls while barring down or placing props, pressure bumps and rock bursts. Not included are accidents in which the motion of machinery or haulage equipment caused the fall either directly or by knocking out support; such falls are classified as machinery or haulage, whichever is appropriate.

FALL OF ROOF

August 12, 2014

Underground Crushed & Broken Limestone mine - A haul truck was being loaded underground when a significant portion of the immediate roof above the truck fell, covering the top of the truck and the area behind it. The truck driver, who was in the cab, received medical treatment.

FALL OF ROOF

August 2014

Underground Limestone mine – An accident occurred when loose rock fell from the roof of an underground mine following a shot and struck a miner in the man basket of a blasting truck. The miner suffered fractures on his face, cracked ribs, a broken scapula, and abrasions and contusions on his back.

FALL OF ROOF

December 2, 2014

Underground Gold mine – A roof bolter working in a heading was uninjured and was able to exit safely after approximately 370 tons of material fell from the 15-foot high back at an intersection 200 feet from his work position. Longer bolts, a tighter bolting pattern, and/or timbering may have prevented this ground fall and should be considered for use in intersections and areas with unknown geology.

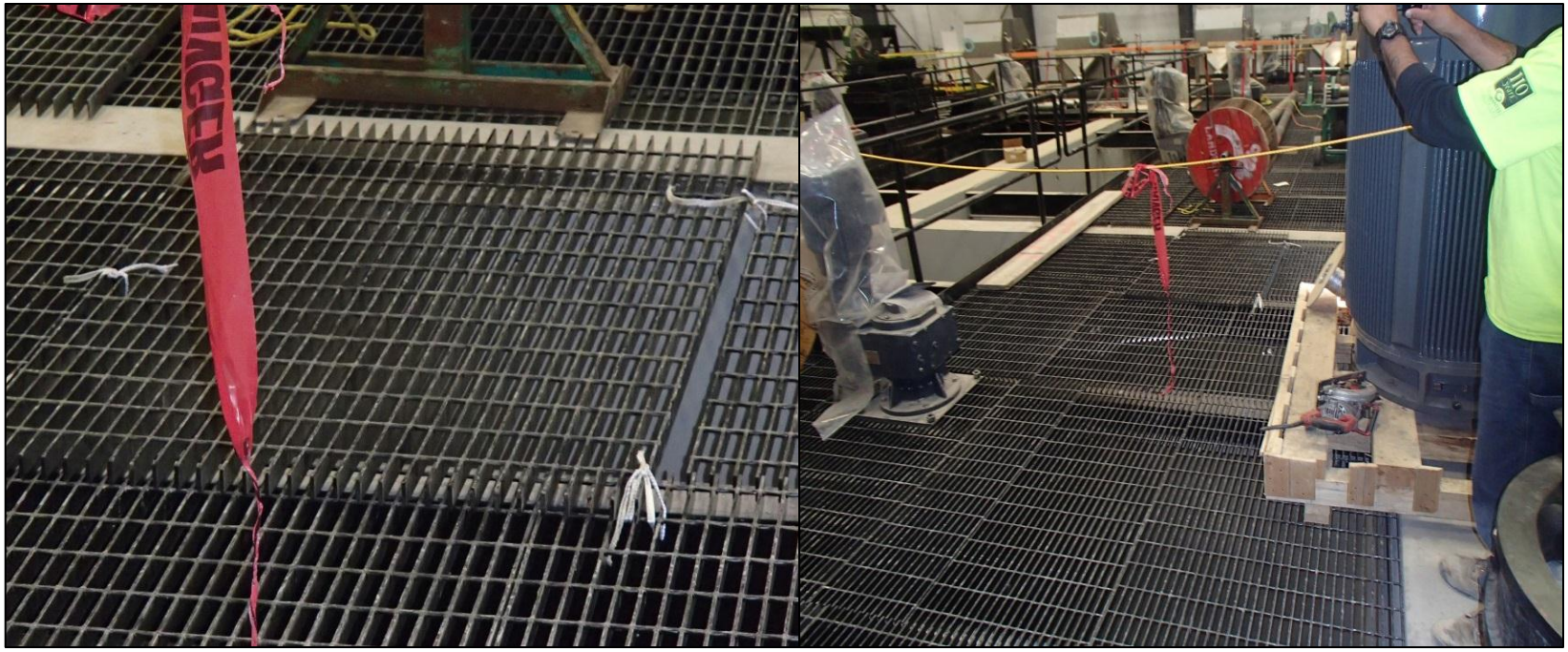
SLIP OR FALL OF PERSON

- Includes slips or falls from an elevated position or at the same level while getting on or off machinery or haulage equipment that is not moving. This also includes slips or falls while servicing or repairing equipment or machinery and stepping in a hole.

FALL OF PERSON

April 25, 2014

Mill construction project – A contract electrician fell 17 feet to the concrete floor below through an unsecured section of floor grate. When the victim stepped on the unsecured floor grate, the section shifted and opened a 3-foot wide by 4-foot long hole through which the victim fell. The victim suffered multiple broken bones.



FALL OF PERSON

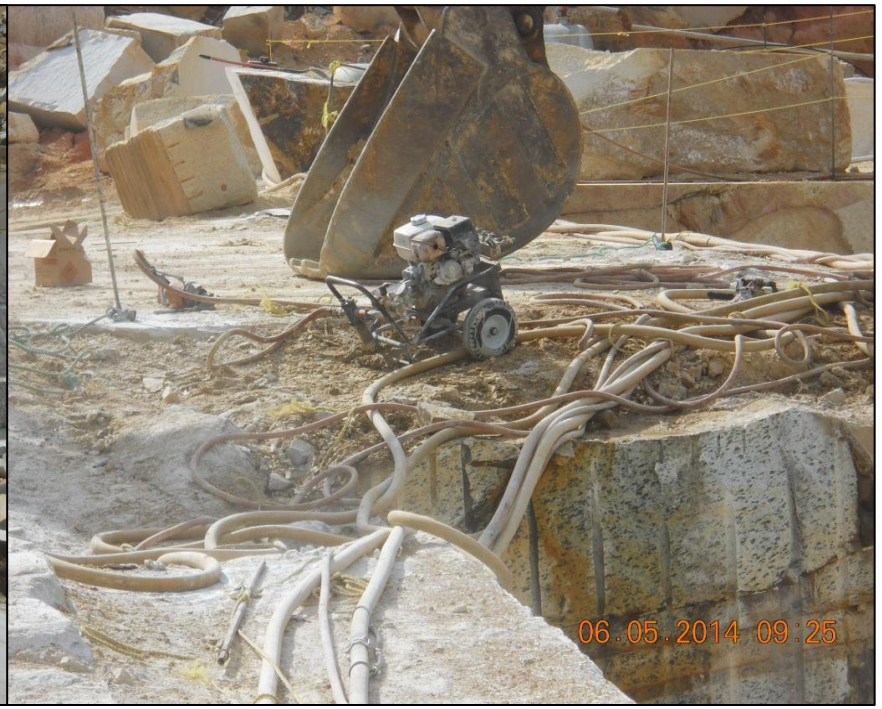
May 13, 2014

Surface Sand & Gravel mine - A maintenance mechanic standing on the top of a gear box fell approximately 11 feet to the ground below and received permanently disabling injuries.

FALL OF PERSON

June 4, 2014

Dimensional Stone - A miner fell 34 feet to the granite floor below while using a 10-pound sledge hammer to break a rock free from the edge of the quarry. The miner was not using fall protection. The miner survived, but sustained serious injuries.



FALL OF PERSON

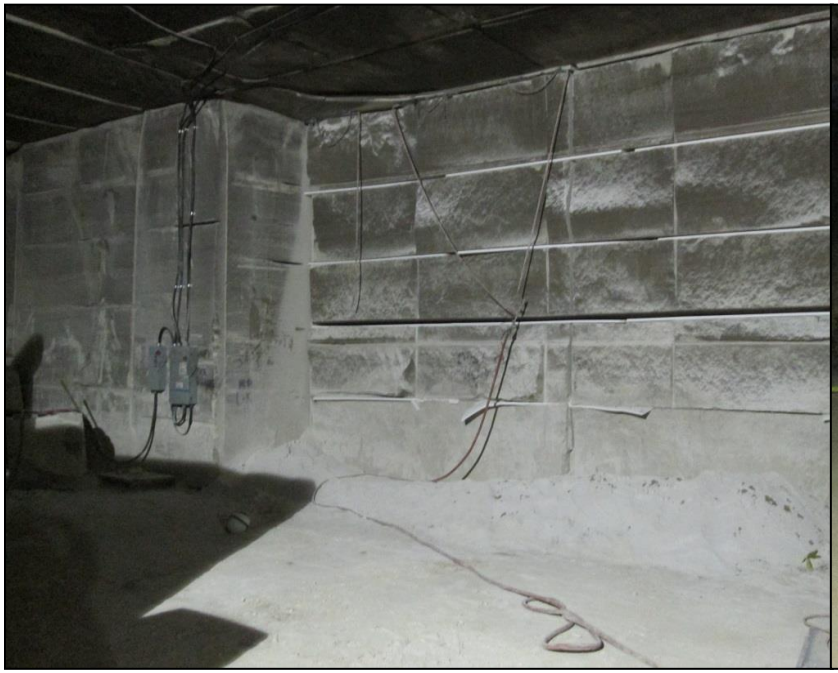
July 23, 2014

Cement Plant - A loaded cement tractor trailer pulled forward in the loading area when a worker noticed he had forgotten his cell phone. A trainee truck driver climbed on top of the bulk cement trailer without using fall protection. The trainee hit his head on the overhead chute and fell approximately 15 feet onto an uneven steel platform below. There were no signs warning of overhead dangers. Had he been wearing fall protection equipment, he likely would have received only minor injuries.

FALL OF PERSON

December 11, 2014

Underground Limestone Mine – A miner climbed a cut dimensional stone face by hand without any fall protection equipment. While climbing, he lost his footing and fell backwards onto a limestone floor, striking his head near his temple, which caused him to become unconscious. The injured miner was transported to the hospital by ambulance.



FALLING, ROLLING, OR SLIDING OF MATERIAL

- If injuries are caused directly by falling material set in motion by machinery, haulage equipment, or hand tools, or while being handled or disturbed, etc., The injury should be charged to the force that set the material in motion. For example, if a rock pushed over a highwall by a dozer strikes another rock which strikes and injures a worker – charge the accident to the dozer. This accident would be charged to the dozer because it most directly caused the resulting accident. This includes accidents caused by improper blocking of equipment under repair or inspection.

ROLLING MATERIAL

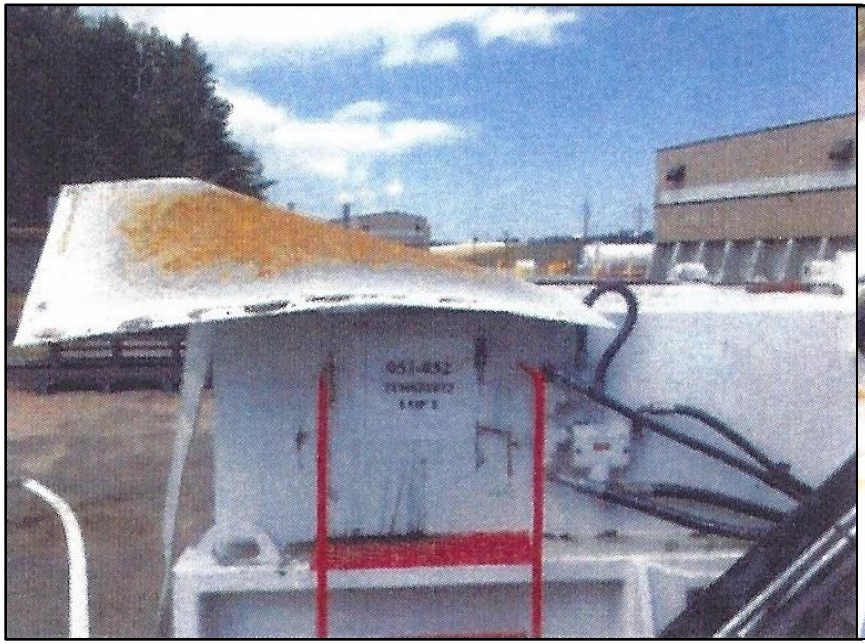
March 26, 2014

Crushed & Broken Traprock mine – An equipment operator was walking an excavator past a highwall when a large rock slide occurred covering the roadway. The operator passed the area within seconds of the slide.

FALLING MATERIAL

August 8, 2014

Copper-Nickel mine – A contractor employee filling a water truck using a fire hose was nearly struck by the metal top of the water tank when the attachment bolts failed under the pressure of the water. The employee was standing on the truck deck monitoring the tank level sight glass. When the tank reached the full mark, the bolts holding the top cover of the tank failed, and the water pressure peeled the metal back, just missing him.



SLIDING MATERIAL

August 11, 2014

Sand & Gravel mine - Four miners were walking treadmill style on a moving feed conveyor while attempting to dislodge the plugged material inside the primary feed hopper. One miner was completely engulfed by sliding material, and another was covered up to his waist. After shutting off the feed conveyor the other two workers were able to dig out the two covered miners. All four escaped with minor cuts and bruises.

FALLING MATERIAL

August 12, 2014

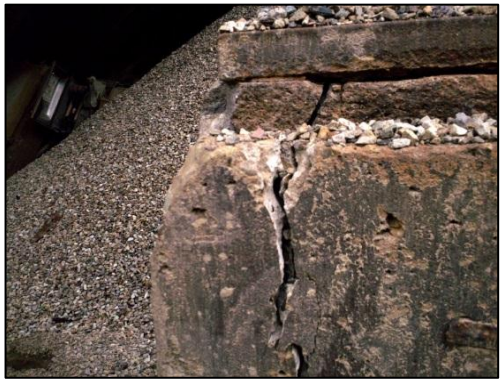
Crushed & Broken Stone mine – After a miner entered the impact crusher to remove a blockage, rocks fell from the feeder above and engulfed him up to his knees. He was freed and transported by EMS to a local hospital.

FALLING MATERIAL

September 5, 2014

Surface Sand & Gravel mine – Structural defects in a primary plant caused a portion of the plant to collapse, including three material bins. There were no injuries.



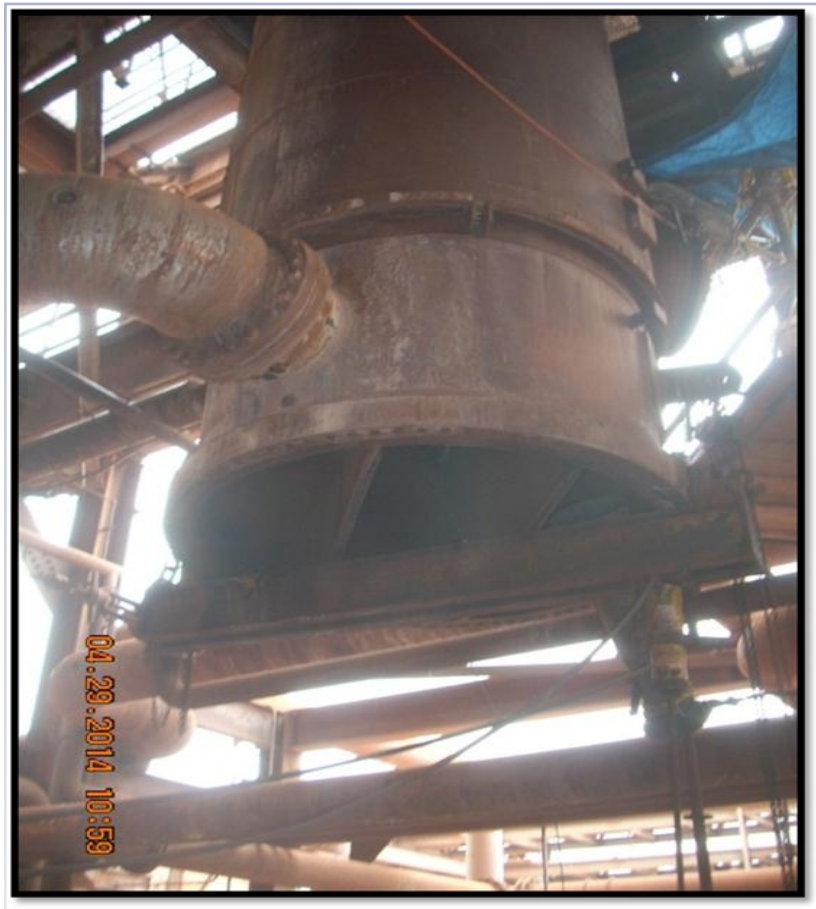
INUNDATION

- An unplanned inundation of a mine by a liquid or gas. The mine may be either a surface or underground operation.

INUNDATION

April 2014

Surface Alumina operation – Nine contractor employees were exposed to high levels of mercury while replacing cooler piping in a heater unit.

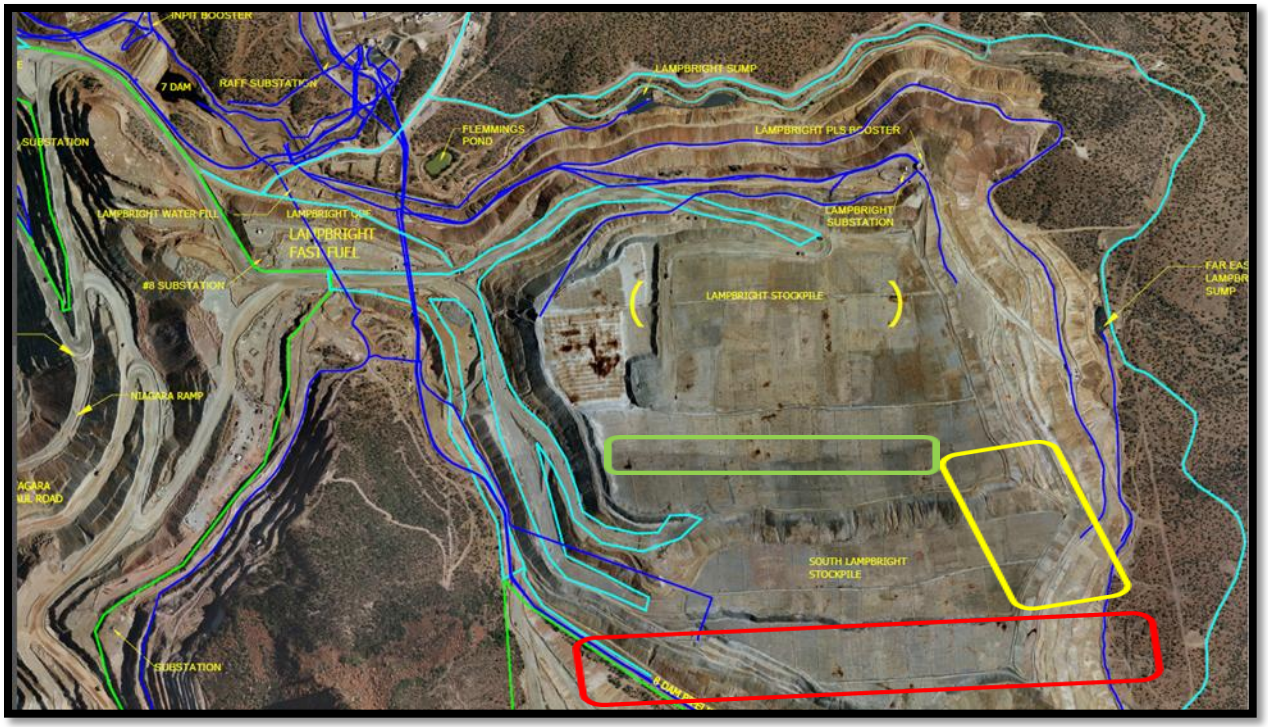


Contractors were standing beneath the heater when mercury fell on them.

INUNDATION

October 2014

Surface Copper mine – Six miners were hospitalized after being exposed to unknown vapors while working on piping in a leach field. All miners recovered.



INUNDATION

December 3, 2014

Cement Plant - During the mine's maintenance shutdown, five contract employees air arc-cutting magnesium liner plates inside a ball mill were treated at a hospital for symptoms of carbon monoxide overexposure. All five of the employees were treated and released.

Many accidents could have been prevented by following these BEST PRACTICES

- **Train all persons,** including task training, to recognize all potential hazardous conditions and to understand safe job procedures.
- **Examine work areas,** to identify all possible hazards and eliminate them before performing work.
- **Do not perform work until the power is off, locked, and tagged**, and machinery components are blocked against motion.
- **Conduct pre-operational checks** to identify any defects that may affect the safe operation of equipment.
- **Maintain mobile equipment.**
- **Always wear a seat belt** when operating mobile equipment
- **Clear and remove all persons from the blast area** unless suitable blasting shelters are provided to protect persons from flyrock.
- **Ensure all active working areas are ventilated** prior to allowing miners to work in those areas.
- **Wear fall protection** where there is a danger of falling.
- **Always provide and maintain guarding** sufficient to prevent contact with moving machine parts.